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cross product	AND ▼

AND

cull orientation	AND ▼

AND

	AND ▼

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| polygon sign | AND ▽ |

AND

| cull orientation | AND ▽ |

AND

| | AND ▽ |

AND

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| polygon vertex | AND |

AND

| cull orientation | AND |

AND

| | AND |

AND

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| culling vertex sign | AND ▼ |

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One letter word or Stopwords are not searchable.

| culling | AND ▽ |

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| | AND ▽ |

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Applicant,Title of invention,Abstract — e.g. computer semiconductor

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| culling product | AND ▾ |

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| culling product sign | AND ▽ |

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| culling product polygon | AND ▽ |

AND

| | AND ▽ |

AND

| | AND ▽ |

AND

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1   **Method and apparatus for clamping image gradients**
     Inventor: ROHNER MICHEL A [US]   Applicant: OAK TECHNOLOGY INC [US]

     EC: G06T15/50D   IPC: G06T15/00

     Publication info: **US6184887** - 2001-02-06

2   **Clipping polygon faces through a polyhedron of vision**
     Inventor: FLORENCE JUDIT K [US]; ROHNER MICHEL A   Applicant: SINGER CO
     [US]
     EC: G06T15/30; G09B9/30B2   IPC: G09B9/08; H04N7/18

     Publication info: **US4208810** - 1980-06-24

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1   **Methods and apparatus for culling sorted, back facing graphics data**

Inventor: HARKIN PATRICK A [US]   Applicant:

EC: IPC: G09G5/00

Publication info: **US2003006993** - 2003-01-09

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1 A Characterization of Ten Hidden-Surface Algorithms

Evan E. Sutherland, Robert F. Sproull, Robert A. Schumacker

January 1974 **ACM Computing Surveys (CSUR)**, Volume 6 Issue 1

Full text available: 📕 pdf(4.47 MB)   Additional Information: full citation, references, citings, index terms

2 PHIGS+ functional description revision

Andries van Dam

July 1988 **ACM SIGGRAPH Computer Graphics**, Volume 22 Issue 3

Full text available: 📕 pdf(4.57 MB)   Additional Information: full citation, abstract, citings, index terms

This is a set of proposed extensions to the proposed PHIGS graphics standard (dpANS X3.144-198x. DIS 9592) to cover the areas of lighting, shading and advanced primitives which have thus far not been addressed by that standard. This document is organized to promote its eventual integration with the existing PHIGS documentation and is therefore not tutorial in nature. It assumes that the reader is familiar with PHIGS. with rendering and with curves and surfaces. This specification has been made a ...

3 Status report of the graphic standards planning committee

Computer Graphics staff

August 1979 **ACM SIGGRAPH Computer Graphics**, Volume 13 Issue 3

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4 Real-time rendering: Hardware-determined feature edges

Morgan McGuire, John F. Hughes

June 2004 **Proceedings of the 3rd international symposium on Non-photorealistic animation and rendering**

Full text available: 📕 pdf(543.94 KB)   Additional Information: full citation, abstract, references

Algorithms that detect silhouettes, creases, and other edge based features often perform per-edge and per-face mesh computations using global adjacency information. These are unsuitable for hardware-pipeline implementation, where programmability is at the vertex and pixel level and only local information is available. Card and Mitchell and Gooch have suggested that adjacency information could be packed into a vertex data structure; we describe the details of converting global/per-edge computatio ...

Keywords: GPU, NPR, contour, shadow volume, silhouette

5 Dual contouring of hermite data

Tao Ju, Frank Losasso, Scott Schaefer, Joe Warren

July 2002

Full text available: 📄 pdf(2.42 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

This paper describes a new method for contouring a signed grid whose edges are tagged by Hermite data (i.e; exact intersection points and normals). This method avoids the need to explicitly identify and process "features" as required in previous Hermite contouring methods. Using a new, numerically stable representation for quadratic error functions, we develop an octree-based method for simplifying contours produced by this method. We next extend our contouring method to these simpli£ed oc ...

Keywords: contouring, crack prevention, implicit functions, polyhedral simplification, quadratic error functions

6 Real-time occlusion culling for models with large occluders

Satyan Coorg, Seth Teller
April 1997 **Proceedings of the 1997 symposium on Interactive 3D graphics**

Full text available: 📄 pdf(861.73 KB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

7 Visibility sorting and compositing without splitting for image layer decompositions

John Snyder, Jed Lengyel
July 1998 **Proceedings of the 25th annual conference on Computer graphics and interactive techniques**

Full text available: 📄 pdf(591.53 KB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

Keywords: compositing, kd-tree, nonsplitting layered decomposition, occlusion cycle, occlusion graph, sprite, visibility sorting

8 Image-driven simplification

Peter Lindstrom, Greg Turk
July 2000 **ACM Transactions on Graphics (TOG)**, Volume 19 Issue 3

Full text available: 📄 pdf(1.98 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

We introduce the notion of image-driven simplification, a framework that uses images to decide which portions of a model to simplify. This is a departure from approaches that make polygonal simplification decisions based on geometry. As with many methods, we use the edge collapse operator to make incremental changes to a model. Unique to our approach, however, is the use at comparisons between images of the original model against those of a simplified model to determine the ...

Keywords: image metrics, level-of-detail, polygonal simplification, visual perception

9 Incremental and hierarchical Hilbert order edge equation polygon rasterizatione

Michael D. McCool, Chris Wales, Kevin Moule
August 2001 **Proceedings of the ACM SIGGRAPH/EUROGRAPHICS workshop on Graphics hardware**

Full text available: 📄 pdf(236.42 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

A rasterization algorithm must efficiently generate pixel fragments from geometric descriptions of primitives. In order to accomplish per-pixel shading, shading parameters must also be interpolated across the primitive in a perspective-correct manner. If some of these parameters are to be interpreted in later stages of the pipeline directly or indirectly as texture coordinates, then translating spatial and parametric coherence into temporal coherence will improve texture cache performance. ...

10 A user-programmable vertex engine

Erik Lindholm, Mark J. Kligard, Henry Moreton

August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(12.03 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

In this paper we describe the design, programming interface, and implementation of a very efficient user-programmable vertex engine. The vertex engine of NVIDIA's GeForce3 GPU evolved from a highly tuned fixed-function pipeline requiring considerable knowledge to program. Programs operate only on a stream of independent vertices traversing the pipe. Embedded in the broader fixed function pipeline, our approach preserves parallelism sacrificed by previous approaches. The programmer is presente ...

Keywords: graphics hardware, graphics systems

11 Kizamu: a system for sculpting digital characters

Ronald N. Perry, Sarah F. Frisken

August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(4.04 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

This paper presents Kizamu, a computer-based sculpting system for creating digital characters for the entertainment industry. Kizamu incorporates a blend of new algorithms, significant technical advances, and novel user interaction paradigms into a system that is both powerful and unique.

To meet the demands of high-end digital character design, Kizamu addresses three requirements posed to us by a major production studio. First, animators and artists want *digital clay* — a ...

Keywords: ADFs, character design, digital sculpting, distance fields, graphics systems, rendering, triangulation, volume modeling

12 Analytic antialiasing with prism splines

Michael D. McCool

September 1995 **Proceedings of the 22nd annual conference on Computer graphics and interactive techniques**

Full text available: pdf(300.28 KB)
ps(2.23 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

13 A fast shadow algorithm for area light sources using backprojection

George Drettakis, Eugene Fiume

July 1994 **Proceedings of the 21st annual conference on Computer graphics and interactive techniques**

Full text available: pdf(81.64 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u>
ps(249.98 KB)   <u>terms</u>

The fast identification of shadow regions due to area light sources is necessary for realistic rendering and for discontinuity meshing for global illumination. A new shadow-determination algorithm is presented that uses a data structure, called a backprojection, to represent the visible portion of a light source from any point in the scene. A complete discontinuity meshing algorithm is described for polyhedral scenes and area light sources, which includes an important class ...

Keywords: backprojection, discontinuity meshing, global illumination, penumbra, shadows,

14 Silhouette clipping

Pedro V. Sander, Xianfeng Gu, Steven J. Gortler, Hugues Hoppe, John Snyder

July 2000 **Proceedings of the 27th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(6.31 MB)   Additional Information: full citation, abstract, references, citings, index terms

Approximating detailed with coarse, texture-mapped meshes results in polygonal silhouettes. To eliminate this artifact, we introduce silhouette clipping, a framework for efficiently clipping the rendering of coarse geometry to the exact silhouette of the original model. The coarse mesh is obtained using progressive hulls, a novel representation with the nesting property required for proper clipping. We describe an improved technique for constructing texture and normal maps over this coarse ...

Keywords: level of detail algorithms, rendering algorithms, texture mapping, triangle decimation

15 Real-time rendering: Interactive rendering of suggestive contours with temporal coherence

Doug DeCarlo, Adam Finkelstein, Szymon Rusinkiewicz

June 2004 **Proceedings of the 3rd international symposium on Non-photorealistic animation and rendering**

Full text available: pdf(382.84 KB)   Additional Information: full citation, abstract, references

Line drawings can convey shape using remarkably minimal visual content. Suggestive contours, which are lines drawn at certain types of view-dependent surface inflections, were proposed recently as a way of improving the effectiveness of computer-generated line drawings. This paper extends previous work on static suggestive contours to dynamic and real-time settings. We analyze movement of suggestive contours with respect to changes in viewpoint, and offer techniques for improving the quality of ...

Keywords: contours, differential geometry, graphics hardware, line drawings, non-photorealistic rendering, silhouettes

16 The out of box experience: lessons learned creating compelling VRML 2.0 content

Sam Chen, Rob Myers, Rick Pasetto

February 1997 **Proceedings of the second symposium on Virtual reality modeling language**

Full text available: pdf(1.25 MB)   Additional Information: full citation, references, index terms

Keywords: VRML, navigation techniques, three-dimensional user interface, virtual environments, virtual worlds

17 Motions & transformations: Fast swept volume approximation of complex polyhedral models

Young J. Kim, Gokul Varadhan, Ming C. Lin, Dinesh Manocha

June 2003 **Proceedings of the eighth ACM symposium on Solid modeling and applications**

Full text available: pdf(3.66 MB)   Additional Information: full citation, abstract, references, index terms

We present an efficient algorithm to approximate the swept volume (SV) of a complex polyhedron along a given trajectory. Given the boundary description of the polyhedron and a path specified as a parametric curve, our algorithm enumerates a superset of the boundary surfaces of SV. It consists of ruled and developable surface primitives, and the SV corresponds to the *outer boundary* of their arrangement. We approximate this boundary by using a five-stage pipeline. This includes computing a ...

Keywords: distance fields, implicit modeling, swept volume

18 View-dependent refinement of progressive meshes

Hugues Hoppe

August 1997 **Proceedings of the 24th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(801.54 KB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

Keywords: dynamic tessellation, level-of-detail, mesh simplification, multiresolution representations, shape interpolation

19 Conservative visibility preprocessing using extended projections

Frédo Durand, George Drettakis, Joëlle Thollot, Claude Puech

July 2000 **Proceedings of the 27th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(933.02 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

Visualization of very complex scenes can be significantly accelerated using occlusion culling. In this paper we present a visibility preprocessing method which efficiently computes potentially visible geometry for volumetric viewing cells. We introduce novel extended projection operators, which permits efficient and conservative occlusion culling with respect to all viewpoints within a cell, and takes into account the combined occlusion effect of multiple o ...

Keywords: PVS, occlusion culling, visibility determination

20 A real-time procedural shading system for programmable graphics hardware

Kekoa Proudfoot, William R. Mark, Svetoslav Tzvetkov, Pat Hanrahan

August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(1.20 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>, <u>review</u>

Real-time graphics hardware is becoming programmable, but this programmable hardware is complex and difficult to use given current APIs. Higher-level abstractions would both increase programmer productivity and make programs more portable. However, it is challenging to raise the abstraction level while still providing high performance. We have developed a real-time procedural shading language system designed to achieve this goal.

Our system is organized around multiple *computation* ...

Keywords: *graphics hardware, graphics systems, rendering, shading languages*

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1 A Characterization of Ten Hidden-Surface Algorithms
Evan E. Sutherland, Robert F. Sproull, Robert A. Schumacker
January 1974 **ACM Computing Surveys (CSUR)**, Volume 6 Issue 1

Full text available: ⬚ pdf(4.47 MB)   Additional Information: full citation, references, citings, index terms

2 Status report of the graphic standards planning committee
Computer Graphics staff
August 1979 **ACM SIGGRAPH Computer Graphics**, Volume 13 Issue 3

Full text available: ⬚ pdf(15.01 MB)   Additional Information: full citation, references, citings

3 PHIGS+ functional description revision
Andries van Dam
July 1988 **ACM SIGGRAPH Computer Graphics**, Volume 22 Issue 3

Full text available: ⬚ pdf(4.57 MB)   Additional Information: full citation, abstract, citings, index terms

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Morgan McGuire, John F. Hughes
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Full text available: ⬚ pdf(543.94 KB)   Additional Information: full citation, abstract, references

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> unsuitable for hardware-pipeline implementation, where programmability is at the vertex
> and pixel level and only local information is available. Card and Mitchell and Gooch have
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Michael D. McCool, Chris Wales, Kevin Moule

Full text available: pdf(236.42 KB)   Additional Information: full citation, abstract, references, index terms

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Keywords: hardware accelerated image synthesis and shading

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Peter Lindstrom, Greg Turk
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Ronald N. Perry, Sarah F. Frisken
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Full text available: pdf(4.04 MB)   Additional Information: full citation, abstract, references, citings, index terms

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Keywords: ADFs, character design, digital sculpting, distance fields, graphics systems, rendering, triangulation, volume modeling

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Satyan Coorg, Seth Teller
April 1997 **Proceedings of the 1997 symposium on Interactive 3D graphics**

Full text available: pdf(861.73 KB)   Additional Information: full citation, references, citings, index terms

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Pedro V. Sander, Xianfeng Gu, Steven J. Gortler, Hugues Hoppe, John Snyder
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Keywords: level of detail algorithms, rendering algorithms, texture mapping, triangle decimation

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August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: 🔲 pdf(12.03 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

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Keywords: graphics hardware, graphics systems

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Keywords: dynamic tessellation, level-of-detail, mesh simplification, multiresolution representations, shape interpolation

12 Projective and view-dependent textures: Exact from-region visibility culling
S. Nirenstein, E. Blake, J. Gain
July 2002 **Proceedings of the 13th Eurographics workshop on Rendering**

Full text available: 🔲 pdf(984.67 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

To pre-process a scene for the purpose of visibility culling during walkthroughs it is necessary to solve visibility from all the elements of a finite partition of viewpoint space. Many conservative and approximate solutions have been developed that solve for visibility rapidly. The idealised *exact* solution for general 3D scenes has often been regarded as computationally intractable. Our exact algorithm for finding the visible polygons in a scene from a region is a computationally tractab ...

13 The out of box experience: lessons learned creating compelling VRML 2.0 content
Sam Chen, Rob Myers, Rick Pasetto
February 1997 **Proceedings of the second symposium on Virtual reality modeling language**
Full text available: 🔲 pdf(1.25 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>index terms</u>

Keywords: VRML, navigation techniques, three-dimensional user interface, virtual environments, virtual worlds

14 Computing exact shadow irradiance using splines

Michael M. Stark, Elaine Cohen, Tom Lyche, Richard F. Riesenfeld

July 1999 **Proceedings of the 26th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(383.20 KB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

Keywords: illumination, rendering, shadow algorithms, visibility determination

15 Real-time rendering: Interactive rendering of suggestive contours with temporal coherence

Doug DeCarlo, Adam Finkelstein, Szymon Rusinkiewicz

June 2004 **Proceedings of the 3rd international symposium on Non-photorealistic animation and rendering**

Full text available: pdf(382.84 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>

Line drawings can convey shape using remarkably minimal visual content. Suggestive contours, which are lines drawn at certain types of view-dependent surface inflections, were proposed recently as a way of improving the effectiveness of computer-generated line drawings. This paper extends previous work on static suggestive contours to dynamic and real-time settings. We analyze movement of suggestive contours with respect to changes in viewpoint, and offer techniques for improving the quality of ...

Keywords: contours, differential geometry, graphics hardware, line drawings, non-photorealistic rendering, silhouettes

16 Computing the antipenumbra of an area light source

Seth J. Teller

July 1992 **ACM SIGGRAPH Computer Graphics , Proceedings of the 19th annual conference on Computer graphics and interactive techniques**, Volume 26 Issue 2

Full text available: pdf(6.08 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

Keywords: Plu¨cker coordinates, aspect graph, discontinuity meshing, radiosity, stabbing lines

17 Motions & transformations: Fast swept volume approximation of complex polyhedral models

Young J. Kim, Gokul Varadhan, Ming C. Lin, Dinesh Manocha

June 2003 **Proceedings of the eighth ACM symposium on Solid modeling and applications**

Full text available: pdf(3.66 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

We present an efficient algorithm to approximate the swept volume (SV) of a complex polyhedron along a given trajectory. Given the boundary description of the polyhedron and a path specified as a parametric curve, our algorithm enumerates a superset of the boundary surfaces of SV. It consists of ruled and developable surface primitives, and the SV corresponds to the *outer boundary* of their arrangement. We approximate this boundary by using a five-stage pipeline. This includes computing a ...

Keywords: distance fields, implicit modeling, swept volume

18 A real-time procedural shading system for programmable graphics hardware

Kekoa Proudfoot, William R. Mark, Svetoslav Tzvetkov, Pat Hanrahan

August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Real-time graphics hardware is becoming programmable, but this programmable hardware is complex and difficult to use given current APIs. Higher-level abstractions would both increase programmer productivity and make programs more portable. However, it is challenging to raise the abstraction level while still providing high performance. We have developed a real-time procedural shading language system designed to achieve this goal.

Our system is organized around multiple *computation* ...

Keywords: *graphics hardware, graphics systems, rendering, shading languages*

19 Global visibility algorithms for illumination computations

Seth Teller, Pat Hanrahan

September 1993 **Proceedings of the 20th annual conference on Computer graphics and interactive techniques**

Keywords: algorithmic triage, global illumination, hidden surface removal, radiosity, visibility space

20 Real-time rendering: Interactive ray tracing of free-form surfaces

Carsten Benthin, Ingo Wald, Philipp Slusallek

November 2004 **Proceedings of the 3rd international conference on Computer graphics, virtual reality, visualisation and interaction in Africa**

Even though the speed of software ray tracing has recently been increased to interactive performance even on standard PCs, these systems usually only supported triangles as geometric primitives. Directly handling free-form surfaces such as spline or subdivision surfaces instead of first tesselating them offers many advantages such as higher precision results, reduced memory requirements, and faster preprocessing due to less primitives. However, existing algorithms for ray tracing free-form su ...

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1 A Characterization of Ten Hidden-Surface Algorithms   ■
Evan E. Sutherland, Robert F. Sproull, Robert A. Schumacker
January 1974 **ACM Computing Surveys (CSUR)**, Volume 6 Issue 1

Full text available: 📄 pdf(4.47 MB)   Additional Information: full citation, references, citings, index terms

2 PHIGS+ functional description revision   ■
Andries van Dam
July 1988 **ACM SIGGRAPH Computer Graphics**, Volume 22 Issue 3

Full text available: 📄 pdf(4.57 MB)   Additional Information: full citation, abstract, citings, index terms

This is a set of proposed extensions to the proposed PHIGS graphics standard (dpANS X3.144-198x. DIS 9592) to cover the areas of lighting, shading and advanced primitives which have thus far not been addressed by that standard. This document is organized to promote its eventual integration with the existing PHIGS documentation and is therefore not tutorial in nature. It assumes that the reader is familiar with PHIGS. with rendering and with curves and surfaces. This specification has been made a ...

3 Incremental and hierarchical Hilbert order edge equation polygon rasterizatione   ■
Michael D. McCool, Chris Wales, Kevin Moule
August 2001 **Proceedings of the ACM SIGGRAPH/EUROGRAPHICS workshop on Graphics hardware**

Full text available: 📄 pdf(236.42 KB)   Additional Information: full citation, abstract, references, index terms

A rasterization algorithm must efficiently generate pixel fragments from geometric descriptions of primitives. In order to accomplish per-pixel shading, shading parameters must also be interpolated across the primitive in a perspective-correct manner. If some of these parameters are to be interpreted in later stages of the pipeline directly or indirectly as texture coordinates, then translating spatial and parametric coherence into temporal coherence will improve texture cache performance. ...

Keywords: *hardware accelerated image synthesis and shading*

4 A user-programmable vertex engine   ■
Erik Lindholm, Mark J. Kligard, Henry Moreton
August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: 📄 pdf(12.03 MB)   Additional Information: full citation, abstract, references, citings, index terms

In this paper we describe the design, programming interface, and implementation of a very efficient user-programmable vertex engine. The vertex engine of NVIDIA's GeForce3 GPU

evolved from a highly tuned fixed-function pipeline requiring considerable knowledge to program. Programs operate only on a stream of independent vertices traversing the pipe. Embedded in the broader fixed function pipeline, our approach preserves parallelism sacrificed by previous approaches. The programmer is presente ...

Keywords: graphics hardware, graphics systems

5 Motions & transformations: Fast swept volume approximation of complex polyhedral models

Young J. Kim, Gokul Varadhan, Ming C. Lin, Dinesh Manocha

June 2003 **Proceedings of the eighth ACM symposium on Solid modeling and applications**

Full text available: pdf(3.66 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

We present an efficient algorithm to approximate the swept volume (SV) of a complex polyhedron along a given trajectory. Given the boundary description of the polyhedron and a path specified as a parametric curve, our algorithm enumerates a superset of the boundary surfaces of SV. It consists of ruled and developable surface primitives, and the SV corresponds to the *outer boundary* of their arrangement. We approximate this boundary by using a five-stage pipeline. This includes computing a ...

Keywords: distance fields, implicit modeling, swept volume

6 A real-time procedural shading system for programmable graphics hardware

Kekoa Proudfoot, William R. Mark, Svetoslav Tzvetkov, Pat Hanrahan

August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(1.20 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>, <u>review</u>

Real-time graphics hardware is becoming programmable, but this programmable hardware is complex and difficult to use given current APIs. Higher-level abstractions would both increase programmer productivity and make programs more portable. However, it is challenging to raise the abstraction level while still providing high performance. We have developed a real-time procedural shading language system designed to achieve this goal.

Our system is organized around multiple *computation ...*

***Keywords**: graphics hardware, graphics systems, rendering, shading languages*

7 Scan line methods for displaying parametrically defined surfaces

Jeffrey M. Lane, Loren C. Carpenter, Turner Whitted, James F. Blinn

January 1980 **Communications of the ACM**, Volume 23 Issue 1

Full text available: pdf(1.28 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>

This paper presents three scan line methods for drawing pictures of parametrically defined surfaces. A scan line algorithm is characterized by the order in which it generates the picture elements of the image. These are generated left to right, top to bottom in much the same way as a picture is scanned out on a TV screen. Parametrically defined surfaces are those generated by a set of bivariate functions defining the X, Y, and Z position of ...

Keywords: computer graphics, parametric surfaces, scan line algorithms, shaded graphics display

8 Dissertation Abstracts in Computer Graphics

April 1989 **ACM SIGGRAPH Computer Graphics**, Volume 23 Issue 2

Full text available: pdf(1.40 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>

The response to the publication of abstracts from masters and doctoral theses in computer graphics has been overwhelmingly positive. This has not, however, increased the number of

schools participating. In fact, the number of schools represented in this year's list has dropped by 65 percent, and only three schools have participated both years. (Three additional schools are represented both years due to abstracts accidentally omitted from last year's list).Since there are limited opportunities to ...

9 Spiraling edge: fast surface reconstruction from partially organized sample points

Patricia Crossno, Edward Angel

October 1999 **Proceedings of the conference on Visualization '99: celebrating ten years**

Full text available: pdf(422.23 KB)   Additional Information: full citation, abstract, references, index terms

Many applications produce three-dimensional points that must be further processed to generate a surface. Surface reconstruction algorithms that start with a set of unorganized points are extremely time-consuming. Sometimes, however, points are generated such that there is additional information available to the reconstruction algorithm. We present Spiraling Edge, a specialized algorithm for surface reconstruction that is three orders of magnitude faster than algorithms for the general case. ...

Keywords: advancing front, surface reconstruction, triangulation

10 Designing audio aura

Elizabeth D. Mynatt, Maribeth Back, Roy Want, Michael Baer, Jason B. Ellis

January 1998 **Proceedings of the SIGCHI conference on Human factors in computing systems**

Full text available: pdf(1.14 MB)   Additional Information: full citation, references, citings, index terms

Keywords: VRML, active badge, audio, auditory icons, augmented reality, awareness, earcons, periphery

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IEE CNF IEE Conference Proceeding

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